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REMARKS***Status of the Application:***

Claims 1–7 are the claims of record of the application. Claims 1–7 have been rejected.

Amendment to the Claims:

Applicants have amended the claims to indicate that in the single speaker box, each said orthogonal speaker element arranged to project sound substantially in the opposite direction from the direction of sound projection of the corresponding virtual speaker

Claim Rejections - 35 USC § 103

Claims 1, 2, and 4–7 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Gerzon et al, US Patent 5,757,927 in view of Gefvert, US Patent 5,850,457.

Regarding claim 1, the examiner asserts that Gerzon et al. disclose a surround sound apparatus comprising a sound source, surround sound decoder 2 which processes B-Format signals for decoding multichannel sound signals (per claims 2, 5 and 7), amplifiers 3 and a plurality of speakers 4.

Claim 1 of the present invention includes a decoder for converting multi-channel sound signals into a series of speaker outputs for virtual speakers placed in pre-determined positions around a listener and projecting sound towards a listener, with the projection direction of at least two of said virtual speakers being substantially orthogonal. Applicants concede that Gerzon et al. includes this feature. FIG. 6 of Gerzon indeed shows playback using a set of speakers surrounding a listener. It is not, however exactly clear that the projection direction of at least two of the speakers is substantially orthogonal.

Applicants' claim 1 also adds a multiplicity of speaker elements arranged around a single speaker cabinet, said speaker elements coupled with predetermined ones of said series of speaker outputs, with at least two of said speaker elements having substantially orthogonal projection directions from said single speaker cabinet and being coupled to substantially orthogonal virtual speaker outputs of said decoder, each said orthogonal speaker element arranged to direct sound substantially in the opposite

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direction from the direction of sound projection from the corresponding virtual speaker.

As admitted by the examiner, this feature is not included in Gerzon et al. The examiner refers to Gerzon et al.'s FIG. 6 that shows a speaker layout with at least two speakers orthogonal to each other. FIG. 6 clearly shows the speakers *NOT* being in the same cabinet, but rather surrounding the listener. Such surrounding of the listener would not be the case if there was a single cabinet.

The examiner asserts that it would be obvious to one of ordinary skill in the art to combine the teachings of Gerzon et al. with the teaching of Gefvert, and that the result of such combining would provide applicants' claim 1.

Applicants respectfully disagree. It is true that one aspect of the Gefvert invention is to reproduce a multichannel sound source using only one speaker cabinet. It also is true that Gefvert mentions that the system can be used for Ambisonic (B-Format) signals. What is not disclosed by Gefvert is the feature that at least two of the speaker elements in the cabinet have substantially orthogonal projection directions from said single speaker cabinet and being coupled to substantially orthogonal virtual speaker outputs of said decoder. The examiner asserts that "the speaker enclosure 92 of Gefvert which has speakers orthogonal to each other." The examiner of course does not assert that these orthogonal speakers are "coupled to substantially orthogonal virtual speaker outputs of said decoder" because there is no mention of this in Gefvert. Applicants also do even not see the feature of speakers having orthogonal projection angles in Gefvert.

Just to add clarity, the applicant has amended claim 1 to include the feature that each said orthogonal speaker element is arranged to direct sound substantially in the opposite direction from the direction of sound projection from the corresponding virtual speaker. This feature is not included in Gefvert or suggested in Gerzon et al. or Gefvert.

Method claims 4 and 6 have also been amended to further point out that the projecting from the speakers of the substantially orthogonal components is in a substantially opposite direction from the direction of projection of the orthogonal components.

All independent claims are thus believed to be patentable over the cited prior art. Allowance is respectfully requested.

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Conclusion

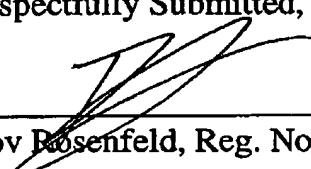
The Applicants believe all of Examiner's rejections have been overcome with respect to all remaining claims (as amended), and that the remaining claims are allowable. Action to that end is respectfully requested.

If the Examiner has any questions or comments that would advance the prosecution and allowance of this application, an email message to the undersigned at dov@inventek.com, or a telephone call to the undersigned at +1-510-547-3378 is requested.

Respectfully Submitted,

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Date


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